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## ORIGINAL ARTICLES.

### DETACHMENT OF THE RETINA.\*

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I feel as if an apology where necessary for presenting this subject for our discussion. "Abandon hope all ye who enter here" seems to be all that we can say to those who come to us with detachment of the retina. But they have come to us for help in the past, and they will come to us for help in the future. If there is any help for them we, as oculists, are those who must give it.

Some cases do recover. Dr. Green has one case which came under my observation. One eye was defective from cataract, the other from detachment of the retina. Dr. Green operated for the removal of the cataract. In the course of the treatment the patient was confined to her bed for some time with both eyes bandaged, and she was kept quiet for some time afterwards, probably about six weeks in all. At the end of this time the retina had reattached itself.

Another case was one of my patients, Mrs. P. She was under treatment for glaucoma of her left eye. During my absence from the city she was seen by Dr. Ewing, who found a detachment of the retina in that eye. One year afterward she returned, when I saw her, and the detachment had disappeared. Since her last visit she had been quite ill and had been confined to her

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\*Read before the St. Louis Ophthalmological Society, April 8th, 1907.

bed for about two months. I wrote to her physician to know what remedies he had used. But he had given her nothing which, in my judgment, was calculated to bring about reattachment of the retina.

It has been my fortune to have a number of cases of detachment of the retina come to me, and I have treated them in the hope of benefitting them; but in none of them have I accomplished anything in the way of restoration which has been satisfactory to me. The treatment was hypodermic injections of pilocarpin with confinement in bed, the eyes being covered with a dark bandage.

Last fall I had four cases come to me about the same time, one a girl of 19 years, who had been very myopic. O.D.M. 7.5D. V. 20/96. O.S.M. 10D. V. 20/48 to 20/38. She had detachment

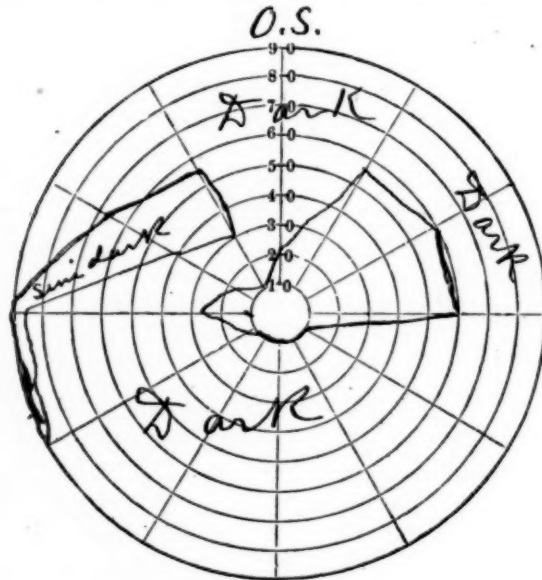


FIG. 1. Mr. V. Field taken Oct. 25, 1906.

of the retina, O.D. Her brother had been my patient for detachment of both retinae some years before. I did everything that I could think of for him; but he lost the vision of both eyes. I had him confined to the bed for 19 days, giving him hypodermic injections of pilocarpin and keeping both eyes bandaged. Having had this experience in the family I did not attempt to treat her, but contented myself with readjustment of her glasses.

The second case was Mr. H., a gentleman 77 years old, who had an almost complete detachment of the retina O. D. Owing to very serious illness in his family it was impracticable for him to undergo any active treatment, accordingly I prescribed for him,  $\text{Hg Cl}_2$  and had him come to see me frequently. I examined the eye very carefully for any evidences of an intraocular growth, which might be the cause of the detachment. Thus far I have been unable to find any.

Another, Mr. V., 42 years old, in fine health. Three weeks before I saw him the left eye was struck by the cracker of a whip. Two weeks afterward, sight was noticed to have failed in that eye, and objects were not seen in the left side of the field

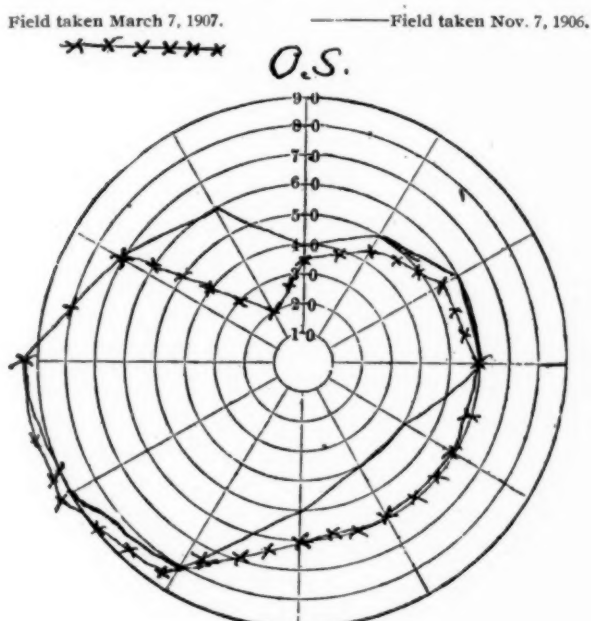


FIG. 2. Mr. V.

O. S. See map of field taken October 25th, '06. I prescribed  $\text{Hg. Cl}_2$   $\frac{1}{10}$  of a grain three times a day, and October 30th confined him to bed in the hospital, and gave him large hypodermic injections of pilocarpin; the largest was  $\frac{1}{3}$  of a grain (20 mm. of a  $\frac{1}{60}$  solution), producing profuse perspiration and salivation. I kept the patient in bed, and on his back as much as possible, and his eyes covered with a black bandage. At the end of 7 days the field, tested by the finger test, seemed normal. I had him come to my office and neither I, nor my assistant, Dr.

Shahan, could, with the ophthalmoscope, detect any detachment of the retina. See map of field taken November 7th. To retain what I had gained I had him return to the hospital where the same treatment was resumed. I almost thought I was to have a successful result. At the end of 7 days more, making 14 days that he had been kept on his back with his eyes covered with a black bandage continuously, except the one day when he visited my office, the patient growing weary of his confinement, the darkness, and of lying on his back, and I, lacking confidence in the treatment, decided to let him go home. He came to my office and the field taken showed no material change. But with the ophthalmoscope there was an unnatural look about the lower portion of the retina which diminished my hopefulness. I had not confidence enough in the treatment to ask him to return to the hospital for further treatment.

Promptly, in four days, he returned, saying that his sight was worse. In going home he took an 8 mile drive at night; the night was cold and he was exposed to the wind in traveling. The following day he received a very slight kick from a mule colt. I think this last fact had nothing to do with the unfavorable result. The field taken was about the same as that of four days before, but there was a large hazy area in the lower temporal quadrant. The ophthalmoscope showed a large detachment of the lower portion of the retina. In looking at the central portion of the retina, that portion which still seemed to see well and to still be attached, there was an appearance as if the retina were marked as the sands on the shore of a lake are marked by the waves. At the time, I thought this was due to some change in the retina, but now, I am inclined to believe that it was due to some change in the vitreous. The patient said that objects looked wavy to him. Most of these wave lines were vertical. They have gradually disappeared. About this time, having heard Dr. Alt speak of a recovery in detachment of the retina, as the result of dusting dionin powder into the conjunctival sac, though it required 9 months, I decided to try it with my patient.

I would dust the powder into the eye for four or five days, after which the powder seemed to lose its chemotic effect. Resting the eye for three or four days, the conjunctiva seemed to recover its normal condition and the dionin again produced marked chemosis. The patient remained in St. Louis under this treatment till March 2nd, three and one-half months, when he returned home. At this time O. D. Em. V. 20/9½ O. S. Hm.

1 V. 20/30. The Hm. O. S. constantly varied from day to day; due to variation in position of the retina. Externally the left eye looked normal. The ophthalmoscope showed large detachment of the retina (lower portion). See field taken March 1st, 1907. He was directed to use a 10% solution of dionin for four days, after his supper, when his work was done and he could remain in the house, and to omit it for the three following days, then to use it again. He was to continue the use of the Hg. Cl<sub>2</sub>.

While I had these cases under my care, Miss M. consulted me, she also having a detachment of the retina. I tried the dionin treatment with her, also giving her Hg. Cl<sub>2</sub> gr. 1/10 t. i. d. After following this treatment for 17 days without any apparent benefit, and after a plain talk with the patient, in which I told her the truth, as near as I knew it, she gave up the treatment and resumed her work as a school teacher. I told her I had no objections to her consulting someone else if she thought she might get help by so doing. But she was satisfied that nothing better could be done and had no desire to consult anyone else.

As we talk with our consciences about our cases of detachment of the retina, what are we to regard as successes; what results justify the expenditure of the physician's time and the patient's money?

Of course, a complete reattachment is success; can we ever expect to get that? I hope some day we will be justified in such an expectation. Is not the tendency of every detachment to go on till it is complete, and if our efforts are followed by a retention of the field, which the patient had when the treatment began, is not this success, and does it not justify what it costs? There appear to be certain well authenticated cases where the retina has become reattached and remained so; but these cases have been accidental.

There is a very interesting fact, which we have all noticed, which makes it seem possible that a detached retina may resume its function, and this fact makes it seem possible that detachment of the retina may be cured. I refer to the fact that we have all seen detachments of the retina gravitate. The fluid lying between the upper portion of the retina and the choroid destroying the lower portion of the field, will gravitate downward detaching the lower portion of the retina and destroying the upper portion of the field; that part of the retina which was first detached and functionless becoming reattached and resuming its

function. This makes it seem possible that if we could get rid of the subretinal fluid the function of the organ would be resumed and the case cured.

In none of these cases which I have reported did I succeed in discovering any rupture of the retina, nor any tumor underlying the detachment. I noticed floating particles in the vitreous in some of them. They probably were present in all but I failed to mention their presence in my notes. Three might be called idiopathic, two traumatic. In the latter class we might be more justified in hoping for benefit. But while we called them traumatic, the interval between the injury and the beginning of the loss of vision was long enough for the injured vitreous to have shrunk. If this had occurred no drawing off of the sub-

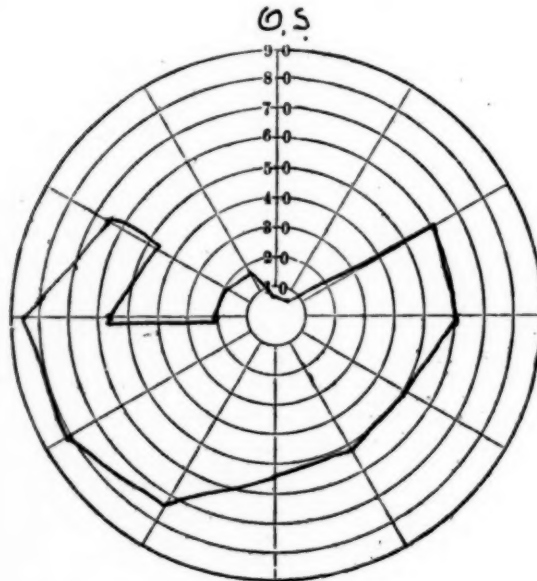


FIG. 3. Mr. V. Field taken May 8, 1907.

retinal fluid would restore the retina to its place, except as the globe might collapse, or distending the vitreous chamber with fluid, might force the retina back to its place against the choroid.

As far as my observation goes, I have been led to believe that detachment, where not due to a subretinal tumor, was, in the cases I have seen, due to a shrinking of the vitreous, or to the formation of bands in the vitreous, which drew upon the retina, detaching it from the choroid.



I have had no experience with surgical interference in these cases, nor have I had an opportunity to observe any such treatment. My experience has made me feel very pessimistic, unless I can believe that my patients would have been much worse except for what I had done for them. Do such results as we get in treating detachment of the retina justify us in considering that our efforts are successful, and that our patients are better off for placing themselves in our care? I think they do and that we should continue our efforts. Possibly some day we shall get a perfect result.

May 8th, '07, Mr. V. returned: O. D. Hm. 0.25D. V. 20/7½ O. S. (the eye in which the retina was detached) Hm. had increased to 3D. Field more contracted, especially in upper portion. See map.

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## PAMPHLETS.

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ON THE RUPTURE OF THE MEMBRANA DESCemetII  
DUE TO HIGH INTRAOCULAR PRESSURE.

(Illustrated.)

By ADOLF ALT, M.D.,\*

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Within the last twelve or fifteen years a number of papers have been published dealing with fissures and ruptures of Descemet's and Bowman's membrane due to high pressure and consequent stretching. Such fissures have been found especially in cases of buphthalmos, in high-grade myopia and in cases of glioma retinae.

As with other observations it is strange that some observers have been able to see so many of these fissures and others so few. Ever since Wintersteiner described and pictured the fissures which he found in cases of glioma I have carefully examined every one of my cases without result. It is, also, strange that in cases of glaucoma in the adult with enormous pressure I have never been able to find any such fissures in Descemet's membrane, nor in a large series of eyes containing an intraocular tumor.

It is, therefore, plain, it seems, that high pressure cannot alone be responsible for such an occurrence, other conditions must favor it, such as the softer tissue of the child and probably some disturbance in the nutrition of the corneal tissue.

It is only recently that it has been my good fortune to find such fissures in a case of glioma in the eye of a child 15 months old.

The child was brought to me on account of an enormous kerectasia. There were two double contoured gray lines visible in the back of the cornea which ran almost concentrically with the corneal periphery, the one about 2 millimeters inward from the temporal and the other about 3 millimeters inward from the nasal margin. The temporal one was longer and better visible than the nasal one. I suspected from this picture that I had before me a case of rupture of Descemet's membrane from high intraocular pressure.

While the cornea was hazy throughout I felt certain that I could see a growth in the depth of the vitreous chamber. Tension was decidedly increased. I advised enucleation.

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\*Read before the St. Louis Ophthalmological Society, May, '07.



After the enucleation of the eye I found that I was not mistaken, as to the tumor. There was a good sized glioma of the retina which in one part reached forward to the posterior surface of the lens periphery.

A large number of sections of the anterior half of the eyeball showed the characteristic results of ruptures of Descemet's membrane. (See Fig. 1.)

The ruptured ends of this membrane were either rolled up spirally towards the cornea or simply projected straight into the anterior chamber. It seems evident from the closeness with

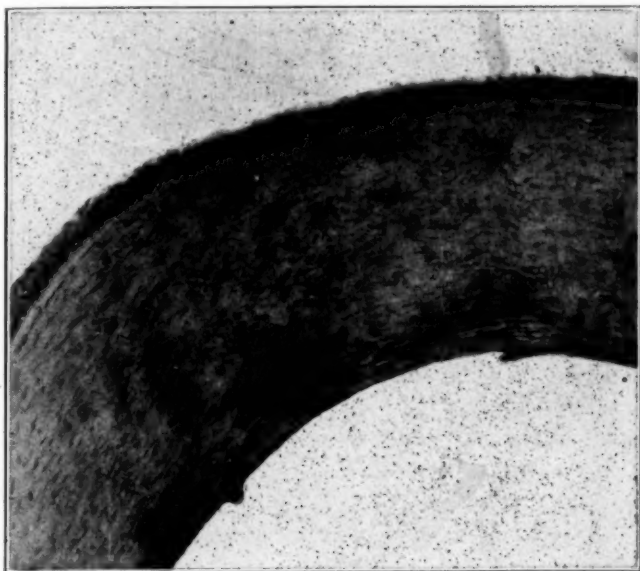


FIG. 1.

which the overlying corneal lamellæ are packed and their stretched out, I may say, straight appearance that at the time the ruptures occurred, the cornea was to some depth, also, torn. That these ruptures must have occurred a considerable time before I removed the eye is evidenced by the fact that not only are the ruptured ends covered with endothelium, but a new Descemet's membrane covers the whole gap between these ends which in turn is also covered by a layer of endothelium. The newly formed membrane and the endothelial lining do not differ from the pre-existing normal ones. (See Fig. 2.)

Just opposite these ruptures in Descemet's membrane the layer of Bowman is also wanting for some distance and the corneal

tissue is simply covered with epithelium. There is no longer a possibility to engage in the controversy whether in such ruptures the posterior margins of Bowman's layer are closer together than the anterior ones, thus forming a funnel with base outward, or the reverse. The ends are simply covered over with epithelium and show nothing characteristic.

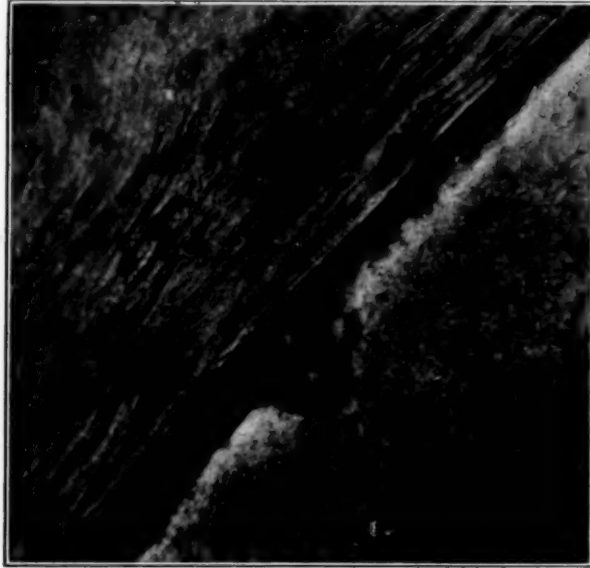


FIG. 2.

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# ON CONJUNCTIVITIS, IRIDOCYCLITIS AND OTHER INFLAMMATORY EYE AFFECTIONS AS PART SYMPTOMS OF A GONORRHOISMUS.\*

BY DR. K. ULLMANN,  
VIENNA AUSTRIA.

(Translated by Adolf Alt, M.D.)

The subject, eye affections as part symptoms of a gonorrhoeismus, lies in the borderland between syphilology and ophthalmology. It contains much that is important and interesting from a general pathological standpoint and some things which are still in the dark. Yet, it may, perhaps, be possible by a common discussion to clear up some of it, especially the pathogenesis and frequency as regards the proportion and the degree of severity of the genital affection which may lead to eye affections. Moreover, there is little known concerning the best therapy and the measures to prevent such complications. Opinions on these points still differ widely.

With the Frenchmen I still cling to the name "gonorrhoeismus," although it does not sound well, first because it has been used in the French literature for years and is shorter than the "general gonococcic infection without infection"; secondly, because it seems less prejudicating than the better sounding and shorter expressions, like "gonorrhoeic metastases," or "gonorrhoeic pyæmia," "gonohæmia," or "gonococcohæmia," which can be found in literature designating the same condition.

Gonorrhoeismus applies first to a chronic infection with gonococci, but also to a chronic intoxication with gonotoxins and just as well in general to a special predisposition for such conditions. A combination of these ætiological factors is what we have probably to deal with.

During the last 15 years I have several times had occasion to see such eye affections during the course of gonorrhoeic processes and to observe them independently, like iritis, keratitis, conjunctivitis. The majority of these was certainly due to accidental contemporaneous appearance or to an esogenous infection with gonococci. Among these I, also, saw 4 cases of gonorrhoeic iritis and iridocyclitis. As regards the cases of different degrees of conjunctivitis, I shall speak of them later on.

\**Wiener Klin. Rundschau*. Paper read on Dec. 10th, '06, before the Vienna Ophthalmological Society.

At one of the recent meetings of the Vienna Dermatological Society I took occasion to show two cases of iritis gonorrhoeica in young men suffering from urethrocystitis and gonorrhoeic polyarticular rheumatism. I want to show these same men again to-day, although meanwhile they have been cured, and although at least in one of them, as far as genital organ and eye are concerned, the process can be looked upon as ended.

In the first of these cases a copious exudation into several joints took place about six months after the gonorrhoeic infection and soon after the iris became inflamed, and this was followed by the formation of several posterior synechiæ. Patient was treated for this iritis in Professor Fuchs' clinic. A cure of the eye affection was reached in about 10 weeks. At least, for several weeks no inflammatory symptom has been observed, and only a small deterioration of the visual acuity, probably due to light opacities in the vitreous has remained behind. This case showed for a time a plastic exudation in the anterior chamber.

The patient, 30 years old, had acquired the gonorrhœa in March, 1900, as his first venereal affection, and had at once entered the hospital and was treated with Janet's lavages, which, however, caused little improvement and were very painful. During this treatment an acute posterior urethritis appeared which was immediately followed by the eye affection. On March 20th he had to seek his bed on account of multiple articular rheumatism. The left foot and shoulder joint and both wrists became affected. For further 3 months the patient was treated at different places chiefly for the rheumatism, and the gonorrhœa was somewhat neglected. Then he was treated in my clinic till October with washing out, massage and instillations and the inflamed joints were treated successfully with hot air.

Through rest and continued treatment of all the affected organs, the process was perfectly arrested; the urine is clear and almost free from mucoid threads. The leucocytes in the prostata secretion are not much more numerous than is physiological, the joints have for weeks been free from pain, but are not as motile as formerly; in the eye, aside from the lowered visual acuity (0.1), nothing further is noted.

The second case is that of a young man, 21 years old, who for the first time acquired a gonorrhœa in August and for some weeks applied only simple methods of treatment. On September 21st he came to my clinic in the following condition: Slight swelling of the prostata, intense cystitis with all sorts of irritating

symptoms, gonococci in the urine and prostata secretion; in the eye there was intense iritis and cyclitis with serous exudation in the anterior chamber, the so-called gonorrhoeic serous iritis. This eye affection had appeared already in the fourth week of the affection in the form of pains in the eye and congestion of the conjunctiva, about a week after the gonorrhoea had spread to the posterior urethra and the prostata.

Almost at the same time or perhaps a little earlier with general symptoms and fever several joints became swollen, namely, the elbow joints, wrists and ankles on both sides, the left elbow joint being the most painful. In the course of about eight weeks under appropriate treatment the gonorrhoea and the rheumatic complications, including the eye affection (clinic of Professor Fuchs), were brought to a nearly complete cure, only a slight ankylosis of the left elbow joint remained behind.

These two cases present all the symptoms which are described as typical of gonorrhoeic iritis and all simultaneous symptoms or as the French call them, syndroms, namely, posterior urethritis, multiple serous swelling of joints with tendency to ankylosis and the eye affections.

These two are, however, not the first and only cases of the kind I have seen. The first case of gonorrhoeic conjunctivitis I saw in 1897. It, too, was combined with multiple swelling of joints, especially the smaller ones, of the hand and to a less degree of one knee joint, and it was remarkable on account of the repeated relapses of the joint affections. This eye was for a long time treated in Professor Stellwag von Carion's clinic under the diagnosis of rheumatic iritis. The affection was unilateral and quite intense, as long as I saw him.

Another case and a much more severe one I saw in 1901. The patient, 40 years old, had been sent to the baths at Baden on account of an affection of bones and joints. His iridocyclitis of a severe relapsing nature, as well as the polyarthrititis and slight tendovaginitis of the lower arm and the muscles of hand and foot, up till then had been looked upon both by the dermatologists and oculists of Budapesth, as due to lues. In spite of several specifically antiluetic cures during 4 months, however, the iridocyclitis had not improved to any extent, and the joint affections had become worse. For external reasons the patient had soon left for home. As I assumed, this case was proven to be due to an ætiological combination of lues and gonorrhoea, the latter having been the more recent affection and evidently

having produced the iritis which on account of the persisting and severe luetic dyscrasia had, also, assumed a luetic character, so that we had to attribute the iridocyclitis to two different specific poisons which having entered the system were metastatically deposited in the ciliary body, the iris and in the serous membranes of the joint and bursæ.

It was particularly interesting in this case that it had been treated for a long time by an oculist as a simply rheumatic iritis, with salicylates and sweats with only a transitory improvement, and that neither the doctors nor the patient paid any attention to the posterior urethritis and the older luetic infection, which in turn made the patient feel certain that his eye affection was in no way connected with his joint affection, the remnants of his gonorrhœa or the lues acquired several years previously.

Just about at that period more attention began to be paid to the possibility of an influence of general gonorrhœic infections on the eye.

Cases of so-called metastatic conjunctivitis usually described as a localized sharply defined swelling with conjunctival ecchymoses, œdema and secondary catarrh of the palpebral conjunctiva, I have never seen, although such cases have repeatedly been observed and described by others physicians, oculists and syphilologists.

On the other hand, in the course of the last few years, I have noted that especially young patients with a fresh anterior gonorrhœa and a gonorrhœa posterior acutissima complained suddenly of burning in the eyes and usually thought they had infected them with the genital discharge. There was, however, in these cases never any secretion, but a slight swelling and injection of the bulbar and palpebral conjunctiva. Oculists who were consulted could only find a slight conjunctivitis, which never developed into a severe, suppurating one, and nothing but the fact that these patients' eyes had never been inflamed before but looked inflamed now, prompted the idea that this irritation of the conjunctiva might be due to toxins circulating in the blood, more especially so, since in all of these cases the injection of the conjunctivæ increased whenever an exacerbation took place in the inflammation of the urethra. In one well observed case the patient assured me that whenever he had acquired a fresh gonorrhœa his eye would become affected. Yet, certainly no transference of infective material had taken place, as far as Professor Koenigstein could see, who declared the conjunctivitis as simply incidental.



This is the sum of my own observations in the field of specific gonorrhoeic metastatic eye affections, which would undoubtedly be more numerous, had I paid more attention to this point before 1900, when I had a much larger material for observation.

No doubt the question of gonorrhoeic metastases in the eye, as compared with others, has in our bacteriologic times been given comparatively little study. From a historical standpoint this can be easily explained. Excellent men like Jaeger, Stellwag and Ruete have fought energetically against the assumption of an autoinfection and metastases, and have thought it their duty as modern ophthalmologists to antagonize the still widely approved humoral-pathological ideas. Thus it probably happens that many a true metastatic iritis or conjunctivitis remained unrecognized. Here in Vienna we have not heard anything of the existence of such gonorrhoeic eye affections before 1888, and we have looked upon the gonorrhoeic iridocyclitis as simply a misnomer for a syphilitic one in which the primary lues had produced a gonorrhoea-like affection. In the middle of the eighties the doctrine of gonorrhoeic metastases was revived, having long been supported by well observed cases, especially by French syphilologists, and after the gonorrhoeic rheumatism as a true gonorrhoeic metastasis had been established beyond a doubt by numerous authors, like Loeb, Fraenkel, Haab, Koenig, Benecke, Souplet and many others.

From the literature it is evident that the question of gonorrhoeic metastasis was not interesting the oculists and syphilologists in the same measure in different countries, nor was it equally well understood. As in so many questions in syphilology the French were far ahead of others.

However, even before the French, English and Swedish authors, like Abernethy (1825) and Brandes (1854) had looked upon iritis with gonorrhoea as a general infection in which the poison circulating in the blood was held responsible for iritis. These authors and even some older ones, as Musgrave, Selle and Hunter, had declared that the joint affections and purpura and erythema of the skin must be considered as gonorrhoeic metastases.

Yet, this opinion was continually fought by the sceptics and the dogma of gonorrhoeic metastases was especially shaken by the new teaching of Jaeger (1841) who showed infection of the eye with gonorrhoea to be due to direct contact.

Lawrence had previously published classical clinical descrip-

tions of metastatic affections in his book on venereal diseases of the eye (1831)—a translation of which appeared at the same time at Weimar. According to extracts from this work recently given by R. von Greef, the clinical histories give all the characteristic manifestations concerning the course of the systemic infection and the form of the eye affections.

Ricord, Rollet (1858) and Mackenzie, too, had gradually adopted the same theory. In 1866 Fournier in the *Nouveau Dictionnaire*, and Galezowski spoke of the frequent occurrence of iritis and conjunctivitis due to gonorrhoeism.

In 1870, occasioned by a case of gonorrhoeic iridochoroiditis metastatica with joint affections in the Berlin surgical clinic, Koenig published a monograph on this subject, and Jonathan Hutchinson in 1873 declared such affections of the eye to be not at all rare.

In 1874 Gosellin reported not only on iritis but also on simultaneous neuralgias due to gonorrhoea and looked upon them as metastatic in character.

In 1877 only, the ophthalmologist Foerster fought by mouth and writing with absolute certainty for the existence of inflammatory metastatic inflammations in the iris and conjunctiva, as well of the gonorrhoeic articular rheumatism.

Arlt was evidently convinced of the correctness of Foerster's views, since, although according to his own statement not rich in experience of his own, he cites Foerster in his text-book in the following words: "If in every case of iritis, especially of the relapsing variety, a careful anamnesis is made, in a short time cases will be detected in which there is no trace of syphilis, but a connection with gonorrhoea. That this is not accidental is proven by the fact that in the same individual a repeated gonorrhoea is accompanied by a renewed iritis." Foerster describes the occurrence of numerous posterior synechiae and simultaneous relapsing articular affections which were wrongly thought to be gouty or rheumatic. From an ophthalmological standpoint this iritis could not well be separated from others; frequently vitreous opacities accompanied it.

Foerster then gives the history of a case in a gentleman, 54 years old, who had formerly suffered repeatedly from gonorrhoea, but had not been reinfected for 20 years. Twenty-five years previously he had had an arthritis for the first time, and ever since he suffered almost annually for months from relapses in the joints and eyes. Several times iridectomies had been per-

formed. The attacks of rheumatism were always accompanied by a thin discharge from the urethra.

Arlt, further, cites important therapeutical facts as given by Foerster, thus showing how many cases of such affections he must have seen. He attributes an undoubtedly exquisite curative effect to large doses of quinine and iodide of potassium in these cases of iritis, which he contrasts with the uselessness of mercurials. Arlt himself considered these cases to be relatively rare (l. c.) and thought they were often confounded with cases of rheumatic iritis.

In 1887 the Swiss ophthalmologist Haab described a case of gonorrhoeic affection of the conjunctiva in which the direct contact infection was prevented by an occlusive bandage and which, therefore, must have been metastatic.

Further cases were reported by Colisman (1882), and White (1883). The latter found among from 7 to 800 gonorrhoeics one case of blennorrhoea from external infection, but out of from 50 to 60 gonorrhoeic cases one case of metastatic conjunctivitis, thus showing the latter to be much more frequent than the former.

In 1884 Haltenhoff added five well described new cases of gonorrhoeic conjunctivitis "without inoculation," as he calls it.

In the same year Galezowski summed up in monography his own quite numerous observations of metastatic eye affections, as conjunctivitis and iritis, but gives also some other eye and nerve affections (neuritis) as due to the same cause.

Among the syphililogs it was especially Jullien who in his practical treatise of venereal diseases in 1886 related a large number of observations of his own of blennorrhagic iritis. He did not find a clinical difference between a gonorrhoeic and any other rheumatic iritis and reported 26 cases, among them 3 of monoarticular and 13 of polyarticular rheumatism.

In the same year Fournier described what he called a sero-vascular conjunctivitis as due to gonorrhoea without contact infection. He was followed in the same year by Trousseau, Froibice and Armaignac, with several cases of conjunctivitis and iritis gonorrhoeica metastatica. Of the oculists Rueckert described a series of well observed cases from Sattler's clinic in Erlangen and demonstrated some of them to the medical society. It seems that Rueckert's report finally made a strong impression on the still sceptical ophthalmologists, since from then on gonorrhoeic metastatic conjunctivitis as well as iritis and keratitis appear in

the better German text-books, as those of Fuchs, Schmidt, Rimpler and Michel.

Further original communications on single cases of gonorrhoeic iritis were made by Le Roy and Nivet, 1887, Despagnet 1888, Fragne 1888, Liebrecht (conjunctivitis), Parinaud, Kipp, Vandersraeten (4 cases in 1891); Jaquet in 1892, among 12 cases of gonorrhoeic rheumatism had observed conjunctivitis 6 times, the course of which went parallel with that of the primary disease, improved and relapsed, or returned when the individual acquired new gonorrhoea.

Noble (1893) reported a case of iridochoroiditis which he thought was the 7th one observed, which by reference to the literature as here given can easily be found to have been incorrect.

In the same year Eliasberg treated on a case of "bilateral parenchymatous keratitis of blennorrhoeic origin."

Knies (1893) in his text-book reports the observation of iritis and conjunctivitis as metastatic eye affection, though very briefly.\*

Stedman Bull (1894) described a case of acute iridochoroiditis during a blennorrhoea. Without adding any new points to the pathogenesis of metastatic inflammations of the eye numerous reports of cases follow from 1894 to 1904.

In 1894 Panas reported cases of iridochoroiditis and neuritis. Buchardt found a bilateral conjunctivitis and in another case iritis and keratitis. Kucharcewsky reported a case of bilateral iridocyclitis combined with gonorrhoeic articular rheumatism; Firschmann a bilateral iritis, Gielen conjunctivitis, Becker one observation of a case of conjunctivitis with hardly any secretion and no gonococci. In 1895 Lipski reports a case of conjunctivitis, in 1898 a case of iritis and conjunctivitis.

In the same year Panas published his interesting case of iridocyclitis with vitreous affection consequent upon general gonococcus metastases. The conjunctiva was not affected and therefore the inflammation of the eye, almost a panophthalmitis, must have been a metastatic one. The case ended favorably.

In 1899 Fromaget observed an iritis with many posterior synechiæ following a gonorrhoea, later, also, an optic neuritis and arthritis of the right knee.

(To be continued.)

\*In the same year the translator reported two cases of gonorrhoeic iritis—this journal Vol. X., p. 3.

## MEDICAL SOCIETIES.

### ST. LOUIS MEDICAL SOCIETY.

#### THE OPHTHALMIC SECTION.

*Meeting March 13, 1907.*

DR. CARL BARCK, Chairman, Presiding.

Dr. John Green, Jr., presented a patient with "sclerosing keratitis." The sclera contiguous to the lower corneal limbus was slightly elevated and of a violaceous tint. The cornea adjacent was the seat of a crescent greyish infiltration. Under sodium salicylate, gr. 15 ter die internally, and local applications of heat, the corneal infiltration cleared below and the scleral swelling subsided. Recently the process had extended to the outer limbus.

Dr. Carl Barck presented two specimens of leukosarcoma of the choroid. Recent writers have denied the existence of leukosarcomata, but the term should be retained, if only to indicate the macroscopic appearance of these tumors. The larger tumor was apparently intraocular, though there was a small black spot just outside the sclera, which was probably a metastasis. In the sclera itself were a couple of small islands, indicating invasion of this coat.

Dr. Meyer Wiener reported a case of steel imbedded in the sclera just above the entrance of the optic nerve. The point of entrance was 2mm. above the upper corneo-scleral margin. He had divided the superior rectus and brought the large magnet in contact with the wound, but failed to extract the steel. He asked for suggestions as to the procedure next to be tried. In the discussion, Dr. J. Ellis Jennings said that an inflammatory exudate surrounding the foreign body might prevent its removal by the large magnet. He thought a small magnet might be more successful. Dr. A. Alt believed that if the large magnet failed, the small would fail also. Dr. J. M. Ball recalled a case in which the foreign body was dislodged only at the eleventh application of the giant magnet. Dr. Barck believed that the division of the superior rectus was entirely unnecessary, as the foreign body could be approached through an incision to one side of this muscle. In some cases he had been successful with the small magnet after failure with the large.



Dr. J. Ellis Jennings reported a case of excavation of the optic disc, of such unusual size as to closely approach the pathological.

The patient, a married woman, aged 32, complained of headache and eye strain.

Refraction  $\left\{ \begin{array}{l} \text{R. } 5/75 + 1.75 \text{ sph.} + 0.50 \text{ cyl. ax. } 105 \text{ V} = 5/5. \\ \text{L. } 5/12 + 3.25 \text{ sph.} + 0.75 \text{ cyl. ax. } 120 \text{ V} = 5/6. \end{array} \right.$

Tension and field of vision normal.

*Ophthalmoscopic Examination.*—There was a very deep excavation of the nerve head of both eyes, more pronounced in the right. The excavation was complete except for a narrow edge of nerve tissue on the nasal side and above. This narrow strip was pierced above by the temporal and nasal arteries. All the other vessels save one, rounded over the edge of the cup and disappeared to view, reappearing again at the bottom in hazy outline, as in glaucoma. The important exception was the lower temporal vein which came directly forward from the center of the excavation, thus indicating in a positive manner that the excavation was not the result of pressure.

Dr. J. Ellis Jennings also reported a case of congenital downward and outward displacement of the lens in a young woman, aged 19. The refraction through the lens was  $-35.00$  sph., and through the aphakic portion of the pupil  $+11.00$  sph.

Vision with  $-30.00$  sph.  $= 15/70$  in each eye.

Vision with  $+11.00$  sph.  $= 15/20$  4 letters in each eye.

Previously she had been wearing  $-20.00$  sph., but now is wearing  $+11.00$  sph. with great comfort and satisfaction.

Dr. J. C. Buckwalter alluded to a case of inward and upward dislocation of both lenses. It had been stated that individuals with congenital dislocation of the lens are frequently the offspring of consanguineous marriages. In the case referred to, consanguinity was denied. Dr. F. L. Henderson inquired why congenital dislocation downward was rare. It would seem that this form would be the most natural. Dr. Carl Barck stated that the explanation was a developmental one, depending on a delayed or faulty closure of the fetal cleft, which, together with the failure of the suspensory ligament at this point would cause the lens to be dislocated upward.

Dr. F. L. Henderson reported a case of thrombosis of the cavernous sinus.

The patient, age 29, was the unmarried daughter of a physician. She had been afflicted for a year with recurrent furuncles. May 8th, 1905, a small boil appeared on the right side of the



nose. This was quickly followed by erysipelas around the right eye—proptosis, chemosis, and rise of temperature to 103 degrees. The temperature and pulse remained up throughout the attack, manifesting a tendency to sudden and radical fluctuations. The author was consulted May 12th. May 13th the orbit was incised deeply in three places but no pus was discovered. May 14th there was pain in the back of the neck on the right side. May 16th, definite swelling of neck back of right ear. May 17th, patient manifested apprehension and nervousness. May 19th, neck and face swollen. Patient in semi-stupor. Operation on cavernous sinus advised. May 21st, delirious at night. May 22nd, began to spit up blood and pus. May 26th, pus began to discharge from small opening back of right ear. Mastoid operation done. Lateral sinus opened. May 29th, free discharge of pus from inner angle of orbit. Anti-streptococcus serum injected. May 30th, temperature 107. Death. The post-mortem revealed thrombosis of the cavernous, lateral and inferior petrosal sinuses and a clot in the jugular extending one-half its length. A probe introduced into the jugular foramen passed downward and forward, following a pus-channel directly into the naso-pharynx, thus explaining the dribbling of pus into the throat. The following are the interesting features presented by the case:

1. Life was prolonged much beyond the period averaged by other reported cases. This was probably due to the drainage established by the openings through the mastoid and pharynx.
2. Thrombosis of one cavernous sinus is usually followed quickly by thrombosis of its fellow, owing to the intimate connection through the circular and transverse sinuses. In this case the left cavernous was never involved, although all the basal sinuses of the right side were full of pus.
3. The œdema of the lids and proptosis decreased after the first few days, although the gravity of the general condition gradually increased.
4. Twenty days after the beginning of the orbital cellulitis pus voluntarily escaped from the orbit, though deep incisions and repeated probings had failed to release any before that time.
5. Though the basal sinuses were full of pus for days, it worked its ways through the posterior pharyngeal wall instead of through the dura into the brain.
6. The presence of an abscess in the sclera, which the author believes to be a very rare phenomenon.

7. Twenty physicians were consulted during the progress of the case.

The author calls attention to the fact that suspicion of thrombosis of the cavernous sinus should be aroused when thorough incision of the orbit produces no pus.

In the discussion, Dr. A. Alt said that the eye was removed so long after death that it did not harden or stain well. There was a large abscess in the sclera near the optic nerve. Dr. Alt had never encountered a scleral abscess and believed it had not hitherto been described. Dr. J. W. Charles stated that the degree of exophthalmos depended on the preservation of the communication between the cavernous sinus and the ophthalmic vein. If this is occluded, the exophthalmos is greater. Dr. A. E. Ewing inquired whether enucleation would be of any value. Dr. Alt thought that enucleation could hardly be performed in time to prevent infection from the orbital tissues to the adjacent cavities.

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THE OPHTHALMOLOGICAL SOCIETY OF THE  
UNITED KINGDOM.

*Thursday evening, March 14th, at 8 p.m.*

The President, MR. PRIESTLEY SMITH, in the chair.

CARD SPECIMENS.

*Cavernous Sinus Aneurism cured by a new method after failure of the usual operation.*—Messrs. F. Burghard and Eric L. Pritchard.

This was the subsequent history of a case shown before the society on December 10th, 1903. On April 7th, 1901, the patient had a fall, and on May 10th there were signs of the formation of an aneurism, so that on June 25th, the right common artery was tied by Mr. Silcock, but the symptoms recurred immediately on getting up.

On February 20th, 1905, the patient was admitted to King's College Hospital, under the care of Mr. Burghard, when he was found to have proptosis of the right eye to the extent of 3mm.; the conjunctiva was injected, and there was pulsation of the globe, though no resistance to backward pressure. The fundus

was normal. A loud, rough, systolic murmur was heard over the right temporal and orbital regions, and the vessels could be felt beating above the seat of ligature of the common carotid artery, and pressure in this region controlled the bruit. Muscular movements of the eye were good. The external and internal carotid arteries were tied with no permanent benefit; so that on March 9th the right angular vein was ligatured. From this time onwards there was a complete cessation of the symptoms with no recurrence, except a slight temporary one; though for several weeks a troublesome chemosis persisted, which eventually cleared up.

The vision in the right eye, at the present time, is 4/60, the optic nerve is pale, and the noises in the head and the bruit have completely disappeared.

In the discussion which followed, Mr. Higgins pointed out that these cases were usually of the nature of an aneurismal varix and not a true aneurism, and that the simpler operations, such as tying the angular vein, were more likely to effect a cure than any of the major operations; indeed, they often got well without any treatment whatever.

*A case of Oxycephaly.*—Mr. George Coats.

Fred R., aged 8, came to the Great Northern Central Hospital on February 21st, 1907, on account of an error of refraction. He showed the deformity of the head known as oxycephaly; the face was broad in the zygomatic region, and from that point tapered rapidly to a rounded boss in the frontal region. The superciliary eminences were flattened, the sagittal suture was represented by a prominent crest, and the cranium was markedly brachycephalic. The refraction was:

$$\begin{array}{cc} \text{R} \begin{array}{c} | +8 \\ \hline | \\ \hline +10 \end{array} & \text{L} \begin{array}{c} | +10 \\ \hline | \\ \hline +12 \end{array} \end{array}$$

and the vision with correction was R.V. 6/24, L.V. 6/24. Nystagmus was present. There was no exophthalmus, the palpebral fissure was of normal width, the ocular movements and the fields of vision were full. The deformity had existed since birth, and had not increased lately; labor had been prolonged but otherwise normal. The patient presented no signs of rickets, and his intelligence was good; there had been occasional headaches since attending school. There were no other deformities in the family, and no specific history.

*A case of Oxycephaly (moderate).*—Mr. Leslie Paton.

Eleanor H., aged 12½, came to St. Mary's Hospital in June, 1906, with the history of an external squint which had become worse lately. The patient suffered from intense headache, and the sight had considerably deteriorated for some time past. Vision was found to be less than 6/60 in both eyes.

There was a moderate amount of "Tower-Skull," the face was long and narrow, the nose had a broad bridge and came straight down from the forehead; the eyes were divergent and slightly prominent; there was no nystagmus. The optic discs were pale and of a bluish-white opaque tint, the lamina cribrosa was not visible, but the edges were well marked and the vessels normal with perhaps a tendency to thickening.

Under the administration of iodide of potassium the sight improved so that by August 14th the R.V. was 6/24 and the left 6/30, while the headaches were considerably relieved. In March, 1907, the headaches returned and the visual acuity again diminished. R.V. with correction=6/24, L.V. 6/60 not improved.

*Corneal changes in a case of Myxoedema, probably due to a deposit of mucin in the fibrous tissue.*—Mr. E. Treacher Collins.

Mrs. S., aged 58, came to the Royal London Ophthalmic Hospital on March 11th, 1907, suffering from pain and inflammation in the left eye; it had been present on and off for 6 months. She had bad sight and saw spots and colored rings in front of her eyes. Her general health had been bad for 7 months, and "her limbs were swollen and the body getting larger"; the skin was waxy looking, the neck was flattened in the region of the thyroid gland, and the speech was slow and labored. The urine was normal. R.V. 6/6, L.V. 6/36, not improved.

In the left eye there was slight ocular conjunctivitis, and in the centre of the cornea a greyish haze made up of several small, discrete, globular-looking, grey dots, in the anterior layers of the cornea; there were some elevations of the surface over the region of the opacity. The periphery of the cornea was clear; tension was normal, and in all other respects the eye was healthy.

The globular appearance of the dots suggested that they might be drops of mucin deposited in the fibrous tissue of the cornea as mucin is deposited in the skin and fibrous tissue of other structures in myxoedema. Mr. Collins intended to try the effect of thyroid extract.

*Peripapillary Ectasia with inclusion of the Optic Nerve.*—Mr. W. Ilbert Hancock.

Gwendoline O., aged 11, came to the Central London Ophthalmic Hospital on March 4th, 1907, complaining of headache and defective sight in the right eye; these symptoms had been noticed for some years, and had not increased recently. There was no history of tumor or inflammation. R.V. c—1.5 cyl.=6/18; L.V. c + 0.5 sph., and + 0.5 cyl.=6/6. The fundus of the right eye showed in the region of the optic nerve a deep, sharply-defined, cup-like depression of the sclera, so disposed that the nerve head was seen lying quite flat slightly to the temporal side of the bottom of the cup. The edge of the cup, best seen with O, was circular, sharply cut, and deeply pigmented, and surrounded by atrophic choroid; the floor of the ectasia was seen with a—14D. The upper retinal vessels emerged from the centre of the disc and could be traced throughout their course; the lower retinal vessels, while easily traced in their first part, were soon lost to view, and reappeared by piercing a semi-transparent, crescentic-shaped membrane, which partially bridged over the scleral aperture below. The rest of the fundus was quite normal; there was no buphthalmos, and the cornea was 11.5 mm. across.

*An Unusual form of Lenticular Opacity.*—Mr. H. Grimsdale.

L. M., aged 13. The right eye was normal, but the left converged, and in the lens of the latter was seen, in the position of a small lamellar cataract, an opacity made up of two layers each consisting of a fine film composed of many rounded dots which closely resembled those of Keratitis Punctata; the posterior layer was the denser and appeared to be situated at the posterior capsule.

PAPERS.

*Case of Acute Septic Meningitis with Thrombosis of the Cavernous Sinus.*—Dr. W. C. Rockcliffe.

Alfred J., 21, was admitted to the Hull Royal Infirmary on November 18th, 1906, suffering from proptosis of the right eye. There was nothing of importance in the history previous to this illness.

On November 13th, 1906, the patient noticed a small spot on the right side of the upper lip; this was pricked and scratched

with a view to its removal with the result that it became infected with a septic material, and erysipelas occurred with much swelling of the lip and right side of the face; on November 17th delirium made its appearance; on admission he was found to have much swelling on the right side of the face starting from the lip, œdema of eyelids, chemosis, proptosis, fixation of the eyeball, but no tenderness, and the vision was normal. There was delirium, the temperature was between  $102^{\circ}$  and  $103^{\circ}$ , but no rigors. Sedatives were administered, and Dr. Eve performed lumbar puncture. On November 19th, some œdema appeared over the mastoid, extending downwards over the course of the jugular vein. Death took place on November 20th, and at the post mortem examination it was found that the meninges in the region of the right cavernous sinus were covered with lymph, and the right, the transverse, and part of the left sinus were thrombosed, the remaining sinus being free. The right orbital tissue was much inflamed and swollen and the veins were distended, but there was no pus.

The cerebro-spinal fluid which had been drawn off was centrifuged and a culture showed colonies of staphylococcus aureus.

Dr. Rockcliffe drew attention to points described by Fuchs in the diagnosis between orbital cellulitis and thrombosis of the cavernous sinus; in the latter there is, in addition to other symptoms, œdema in the mastoid region, and in the former the second orbital cavity hardly ever becomes affected.

*Four cases of Sympathetic Irritation, occurring after 18, 22, 28, and 50 years.—Dr. W. C. Rockcliffe.*

Four cases were described where sympathetic irritation occurred after a varying number of years, but as regards the last case it was admitted to be doubtful whether it should be included as a case of sympathetic irritation.

The first case was that of a patient aged 40, who sustained an injury to the left eye in 1882 while chipping a stone with a metal chisel; in 1893 and 1896 the eye received additional blows, and during the next 4 years the right eye was subject to repeated attacks of conjunctival inflammation. In May, 1900, there was sympathetic irritation of the right eye with some keratitis punctata; the left eye was excised in June, 1900, and the foreign body (steel) found at the back of the globe.

The second case had the right eye injured by a punctured wound, resulting in complete disorganization of the globe; 22



years afterwards some hot acid splashed into this same eye, and irritation appeared in the other eye, followed by iritis, synechia, and dense keratitis punctata. The right eye was excised and the left improved, but the deposits on the cornea remained and the vision was 6/60.

The third case was that of a patient who had received an injury 51 years previously to the left eye by a piece of stone, resulting in traumatic cataract; there was myopia of 10D. in the right. In January, 1907, the right eye became glaucomatous with tension of +1 and some keratitis punctata. In February the left eye was excised.

The fourth case was that of a man aged 56, who had received 28 years before a blow in the left eye with some hot metal; in November, 1906, there was a question of sympathetic inflammation in the other eye, though no definite signs of cyclitis were present; but there was a suspiciously glaucomatous appearance about the optic disc; and as a result of instillation of atropine for refractive purposes, the vision was reduced to counting fingers, with loss of a part of the visual field. On February 5th, 1907, the left eye was removed, there being no P.L., and on February 20th the sight of the right eye was somewhat improved.

*Cysts of the Pars Ciliaris Retinae.*—Mr. A. R. Brailey.

The conclusions arrived at in this paper were drawn from the examination of 20 microscopical specimens, one of which was cut in complete serial sections, all the sections being kept; the latter method of cutting and examination is the only reliable one for definitely proving the existence of a true cyst, though the discovery of material in the interior of the cyst different in structure or staining properties from that in the posterior chamber is also good evidence of the existence of a genuine cystic formation.

The following conditions may simulate the formation of cysts:

- (1) Simple depressions in or between neighboring ciliary processes.
- (2) Contact, with true union, of adjacent processes.
- (3) Free bands of proliferated epithelial cells stretching between the processes or forming festoons on the flat part of the ciliary body.
- (4) Fibres of the zonula, anterior limiting membrane of the vitreous, or fibrous bands of new formation united to the ciliary processes.

Mr. Brailey proposed to classify these cysts according to their

several modes of origin, premising that the general pathology in this class of case consisted in hypertrophy of the ciliary processes and proliferation of the epithelium. The proliferation was generally confined to the non-pigmented layer, though occasionally it occurred in the pigmented layer.

There are three obvious possibilities of origin in the formation of these cysts.

(1) Simple detachment of the non-pigmented layer.

(a) Detachment of both pigmented and non-pigmented layer.

(2) Proliferation of epithelial cells with formation of a cavity in the centre of the mass.

(3) Proliferation and union of cells of adjacent processes leading to shutting off of a portion of the posterior chamber.

According to Kuhnt, the first is the commonest mode of origin, and Mr. Brailey's investigations confirmed this, and they also indicated that detachment of both layers never occurs.

Mr. Brailey found examples of all three methods of cyst formation. In the first class of cases, which constituted 40 per cent of the whole number, there was a single layer of non-pigmented cells lining the inner wall, but no proliferation and no vacuolation; this kind of cyst is found after evacuation of the aqueous fluid.

The second class of cases has both kinds of cells bounding the cyst, but while the outer layer is unaltered, the inner may be normal, proliferated, or vacuolated. This constituted 25 per cent of the cases. The third class has both kinds of cells forming the outer wall of the cyst, with proliferation of cells from adjacent processes which finally fuse and ultimately form cysts enclosing a portion of the posterior chamber.—(*Ophth. Review.*)

PRELIMINARY PROGRAM OF THE SECTION ON  
OPHTHALMOLOGY OF THE AMERICAN MEDICAL ASSOCIATION.

*Fifty-eighth Annual Meeting at Atlantic City, N. J., June 4-7.*

Chairman, G. C. Savage, Nashville, Tenn.; Secretary, Albert E. Bulson, Jr., Fort Wayne, Ind.

Chairman's Address: G. C. Savage, Nashville, Tenn.

Address: What America Has Done for Ophthalmology. Alvin A. Hubbell, Buffalo.

Address: What Europe Has Done for Ophthalmology. R. A. Reeve, Toronto, Can.

Address: Modern Views on Physiology and Pathology of Accommodation. Prof. Carl Hess, Würzburg, Germany.

Cataract Extraction: (I) Is the Case Operable? (II) Preparation of the Patient; (III) The Anæsthetic. E. E. Jack, Boston, Mass.

The Incision of the Extraction of Cataract and the Iridectomy. John E. Weeks, New York City.

The Delivery of the Lens for the Extraction of Cataract; Irrigation of the Anterior Chamber, and the First Toilet of the Wound. L. Webster Fox, Philadelphia.

The Immediate After-Treatment of Cataract Operations (with bandage). William H. Wilder, Chicago.

The Immediate After-Treatment of Cataract Operations (without bandage). J. W. Scales, Pine Bluff, Ark.

Operations for Secondary Cataract. Peter A. Callan, New York City.

Does the Opacity of Incipient Cataract Ever Regain Transparency? Leartus Connor, Detroit.

Concerning Loss of Vitreous Humor in the Operation for the Extraction of Cataract. J. M. Ray, Louisville, Ky.

Yeast Cells as a Probable Cause of Ulcerative Keratitis. George F. Keiper, Lafayette, Ind.

Ligation of the Common Carotid Artery for Malignant Recurrent Hæmorrhage of the Vitreous. George S. Derby, Boston, Mass.

Neuro-Fibroma of the Orbit; Kroenlein Operation. W. R. Parker, Detroit, Mich.

- Metastatic Conjunctivitis in Gonorrhœa. James J. Carroll, Baltimore.
- Some Considerations in the Treatment of Lacrimal Obstruction. Mark D. Stevenson, Akron, Ohio.
- A Method of Performing Tenotomy which Enables the Operator to Limit the Effect as Required. Frank C. Todd, Minneapolis.
- The Treatment of Strabismus in Young Children. A. R. Baker, Cleveland, Ohio.
- The Congenital Palsies of Eye Muscles. William C. Posey, Philadelphia.
- Ocular Rotations in Paresis. Francis Valk, New York City.
- Ocular Neurasthenia. Hiram Woods, Baltimore.
- A Protest Against the Employment of Paraffin Injections Near the Eyes. A. E. Davis, New York City.
- Further Observations on Retinitis Punctata. H. Gradle, Chicago.
- Myopia Associated with Opacities of the Cornea. W. L. Pyle, Philadelphia.
- Indications for the Employment of Adrenalin Chlorid, in Connection with Cocain, in Operations on the Eye. Samuel Theobald, Philadelphia.
- The Preventative Treatment of Transferred Ophthalmitis (so-called Sympathetic Ophthalmia). Charles A. Oliver, Philadelphia.
- Premiums Paid to Experience. (The Results Obtained in Private Practice from Therapeutic Measures, Compiled from a Statistical Study of 5,000 Cases.) F. T. Rogers, Providence, R. I.
- The Value of Tuberculin TR as a Diagnostic and Therapeutic Agent in the Recognition and Treatment of Tuberculosis of the Eye. With Report of Cases. Charles S. Bull, New York City.
- The Relation of the Circumferential Space to the Causation of Glaucoma, as Shown by the Würdemann Lamp. John A. Tenney, Boston.
- Comparative Potency of Hyoscin and Scopolamin Hydrobromid in Refraction Work. Wendell Reber, Philadelphia.
- The Surgical Treatment of Chronic Glaucoma. S. D. Risley, Philadelphia.

- The Parabolic Reflector for Illuminating Test Charts. Mortimer Frank, Chicago.
- The Treatment of Ulcers of the Cornea. H. Bert Ellis, Los Angeles.
- The Treatment of Purulent Ophthalmia. George H. Price, Nashville, Tenn.
- The Treatment of Iritis. E. C. Ellett, Memphis, Tenn.
- The Treatment of Interstitial Keratitis. H. H. Martin, Savannah, Georgia.
- The Treatment of Recent Trachoma. Thomas A. Woodruff, Chicago.
- The Treatment of Chronic Trachoma. A. E. Prince, Springfield, Ill.
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### BOOK REVIEWS.

CLINICS IN OPTOMETRY. A Text-Book of the Practice of Optometry. By C. H. Brown, M.D. With illustrations. The Keystone Publishing Co., Philadelphia. 1907.

These clinics in optometry are not only pleasant reading, but are full of good and wholesome advice, and it would pay every student to get thoroughly familiar with them. They treat on all that may be useful in this so necessary field of ophthalmology, including the fitting of spectacles and eye glasses.

WELLCOME'S PHOTOGRAPHIC EXPOSURE RECORD AND DIARY, 1907. Burroughs, Wellcome & Co. London. New York.

This handy little pocket record is gladly recommended to every one who photographs—and who does not? It is full of all sorts of valuable information about the timing of exposures in different climates and temperatures, and about developing the plates or films. Incidentally the tabloid products of the well known firm of Burroughs & Wellcome are not forgotten.

RETINOSCOPY IN THE DETERMINATION OF REFRACTION AT ONE METER DISTANCE WITH THE PLANE MIRROR. By James Thorington, A.M., M.D. P. Blakiston's Son & Co. Philadelphia. 1907. 54 illustrations.

This is the 5th edition of Thorington's Retinoscopy which we have formerly taken occasion to recommend to our readers. It is enlarged by the addition of the description of the electric ophthalmoscope. Its popularity is apparent. ALT.

## PAMPHLETS.

Thrombosis of the Cavernous Sinuses, with Report of Four Cases. By H. G. Langworthy.

Extraction of the Lens in Capsule (East Indian Operation) as a Method of Procedure in Case of Immature Cataract. By M. Standish.

Silver Preparations in Conjunctival Disease. By M. Standish.

Report of a Fatal Case of Cerebellar Abscess, with Demonstration of the Petrous Pyramid and Cerebellum. Remarks on the Operative Treatment. By A. Knapp.

Eyestrain as a Factor in Functional Nervous Disabilities. By M. Standish.

What Cases of Chronic Purulent Otitis Require the Radical Operation? By A. Knapp.

The Ocular Symptoms of Tumor of the Cerebellum. By G. E. de Schweinitz.

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